

Claims

[c1] *unpatentable* 1. An apparatus for optical scanning of multiple specimens (1), comprises a specimen receiving device (2) for holding the specimens (1), a scanning device (3) provided for optically scanning the specimens, the specimen receiving device (2) defines an axis (4) of rotation and the scanning device (3) is arranged movably relative to the specimen receiving device (2).

[c2] 2. The apparatus as defined in Claim 1, characterized in that the scanning device (3) or the specimen receiving device (2) is linearly displaceable wherein the scanning device (3) defines a movement in a radial direction (5) and the specimen receiving device (2) defines a movement in a radial direction (6), and the relative movement between scanning device (3) and specimen receiving device (2) occurs in the radial direction (5, 6).

[c3] 3. The apparatus as defined in Claim 2, characterized in that the scanning device (3) defines a further axis (7) of rotation wherein the scanning device (3) or the specimen receiving device (2) is arranged rotatably or pivotably about a the axis (7).

[c4] *unpatentable* 4. The apparatus as defined in Claim 1, characterized in that the optical distance between the specimen (1) and scanning device (3) remains substantially constant during of a relative motion between the scanning device (3) and the specimen receiving device (2).

[c5] 5. The apparatus as defined in Claim 1, characterized in that the specimen receiving device (2) defines a rotation speed of the specimen receiving device (2), and the rotation speed is dependent on the relative position between the specimen receiving device (2) and the scanning device (3).

[c6] 6. The apparatus as defined in Claim 5, characterized in that the rotation speed is dependent on the detected data stream of the scanning device (3).

[c7] 7. The apparatus as defined in Claim 1, characterized in that the specimen receiving device (2) has a large mass.

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[c9] 8.The apparatus as defined in Claim 1, characterized in that the specimen receiving device (2) receives a single, replaceable specimen vessel.

[c10] 9.The apparatus as defined in Claim 1, characterized in that the specimen receiving device (2) receives a replaceable carousel insert (8).

[c11] 10.The apparatus as defined in Claim 9, characterized in that the carousel insert (8) receives individual specimen holders (9).

[c12] 11.The apparatus as defined in Claim 10, characterized in that the individual specimen holders (9) are positionable in a predefinable plane on the carousel insert (8) with retaining means (10).

[c13] 12.The apparatus as defined in Claim 10, characterized in that the individual specimen holders (9) are positioned resiliently.

[c14] 13.The apparatus as defined in Claims 1, characterized in that an autofocussing means is provided for maintaining the specimens in focus.

[c15] 14.The apparatus as defined in Claim 13, characterized in that the autofocussing means maintains the surface of the rotating specimen receiving device (2) or of the specimen vessel or of the specimen holders (9) located in the carousel insert (8) always within a deviation in the direction of the optical axis (12) of the scanning device (3) of less than $20 \mu m$.

[c16] 15.The apparatus as defined in Claim 1, characterized in that at least one laser beam is provided for scanning the specimens (1) and at least one detector (14) detects the light reflected from the specimens.

[c17] 16.The apparatus as defined in Claim 15, characterized in that the laser beam scans in at least one direction.

[c18] 17.The apparatus as defined in Claim 15, characterized in that the laser beam is stationary relative to the scanning device (3).

18.The apparatus as defined in Claim 15, characterized in that scanning is accomplished with laser light of different wavelengths.

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[c20] 19. The apparatus as defined in Claim 15, characterized in that the laser beam has an axial extent of the focus region in the specimen region of less than $40 \mu\text{m}$.

[c20] 20. The apparatus as defined in Claims 15, characterized in that the laser beam has a lateral extent of the focus region in the specimen region in a range between $5 \mu\text{m}$ and $200 \mu\text{m}$.

[c21] 21. The apparatus as defined in Claims 15, characterized in that the laser beam defines an incidence angle on the surface of the specimen receiving device (2) or the specimen vessel or onto the specimen holders (9), wherein the incidence angle is greater or less than zero.

[c22] 22. The apparatus as defined in Claim 14, characterized in that synchronization markers (19) are provided on the specimen receiving device (2) or the specimen vessel or the carousel insert (8).